REMARKS

Hubert T. McGovern, co-inventor of the present application and Vice President and General Manager of the Assignee, and the undersigned wish to thank the Examiner and Primary Examiner Flemming Saether, for the interview at the United States Patent and Trademark Office on November 17, 2003.

At the interview, Mr. McGovern explained the development of the screw, which is the subject of the present invention, and explained how the subject screw works in the preferred application for securing composite decking material to an underlying support or stud so that the volcano and/or mushroom effect is eliminated. Mr. McGovern drove, by means of a power driver, a sample TrapEase screw, as disclosed in and claimed in, at least, the pending independent claims of the patent application, into composite decking material. In the initial penetration into the composite decking material, the material from the decking material was removed to the surface and a volcano effect was clearly observable. However, at an intermediate penetrating position of the screw, as the screw was continued to be driven into the decking material, the material at the surface was essentially "sucked" or driven back into the opening produced by the screw, and there was absolutely no volcano or mushroom effect at the completion of the driving process. A completely smooth-seated and clean-finished appearance of the seated screw was observed.

At the interview, it was explained that the highly-remarkable performance of the screw was believed to be a result of the relative and type of threading between the upper threading of the screw and the lower threading of the screw and that an important significant factor, which produced an unexpected result, was the increased diameter (mass per axial length) of the upper shank portion of the screw, which produced the enlarged diameter of the shank at the upper cylindrical-threaded portion as opposed to the lower cylindrical-threaded portion.

At the interview, it was also indicated that the commercial embodiment of the TrapEase screw, which is the subject of the application, had met with widespread commercial success; that, in fact, the screw had received acclaim from numerous people in the field and that the screw was essentially the most successful product in the history of the assignee of th invention; that the screw, which was marketed under the

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TrapEase nam had captured a significant share of the rel vant mark t for deck screws for composite materials in that millions of the screws had been manufactured and sold by the assignee company; and that the sales of the screw had grossed millions of dollars for the assignee company.

During the interview, the undersigned also discussed the cited rejections of record and, in particular, the combination of the Takasaki reference and the cited De Caro reference. The undersigned indicated that it was believed that the proposed combination was improper in that there existed no motivation whatsoever to combine the references, which were essentially addressing wholly different problems, and it was the Applicants' contention that they could not be properly combined to support the rejections of record. A representative sample of a De Caro plate and screw as disclosed in the cited De Caro reference was displayed and it was emphasized that the lead thread of the screw of the De Caro does not condition the plate opening, in any way, and the asserted analogous De Caro trailing threads are essentially the only threads that threadably engage into the plate. In addition, the screw head is non-seating in the De Caro reference and there is absolutely no suggestion of, or even the need to address, the problem of mushrooming or volcanoing as applied to a seated screw. In this regard, it is clear that the De Caro reference is clearly a nonseating-type screw which addresses a wholly different problem of over-tightening stress plates for roofing applications.

The Applicants maintain the position that the combination of Takasaki and De Caro and, indeed, all of the combinations, which have been cited to reject the claims, are not proper. Accordingly, Applicants as discussed hereunder, specifically maintain their position with respect to the prior art rejections.

Applicants also enclose herewith a Declaration of Hubert J. McGovern, co-inventor of the screw, which is the subject of the present application, and Vice President and General Manager of the Assignee, Olympic Manufacturing Group, Inc., to establish that the screw of the present invention has met with widespread commercial success and that, indeed, the results which are, in large part, attributable to the thread configurations and the cross-sectional area at the upper portion of the shank being greater than the cross-sectional area of th shaft along the lower portion of th shank,

which featur s cooperate to provide the superior screw performanc .

Applicants also wish to further clarify that the disclosed buttress thread in th application, as disclosed and claimed, does not need to be precisely perpendicular to the axis of the shaft. One specific disclosure is oriented in the patent specification for an inverted buttress thread at a 10° angle to the perpendicular plane at the underside support surface. It should be fully understood that the term "buttress thread" for metal fasteners and as used in the application can have a support surface, which is mounted at a slight angle to a precise perpendicular plane to the central axis of the shaft.

Reconsideration of the various rejections set forth in the Office Action dated 06/26/2003 is respectfully requested in view of the foregoing and following remarks and the objective evidence of non-obviousness set forth in the submitted Declaration of Hubert T. McGovern.

No claims have been amended. Upon entry of the amendment, claims 1-8, 10-32, 34-42, 44-48, 50-55, 57-64, 66-97, 99-104, 106-110, 113, and 119 will be pending in the present application. In addition, Applicants have submitted herewith objective evidence with regard to patentability.

De Caro, United States Patent No. 4,959,938, is Nonanologous Art

Rejection of the claims is improper for at least the reason that the De Caro '938 reference is directed toward a different field of endeavor than the Applicants' claimed invention and is not pertinent to the particular problem with which the Applicants are concerned. Simply stated, a person of ordinary skill in the art would not reasonably have expected to solve, at least, the problem of "volcanoing" or "mushrooming" in composite building materials with a reference dealing with a "non-seating plate/screw assembly" as found in De Caro '938. The De Caro '938 explicitly teaches a plate and screw system with the screw having threads to hold down the plate. The plate is in turn used to hold down "material for a roof deck". De Caro '938, column 2, lines 23-24. The threads of the De Caro' 938 are designed, under certain conditions, to entirely "disengage" with the substrate of the plate into which they are fastened. De Caro' 938, column 5, lines 4-6. For at least these reasons the De Caro '938 reference is nonanologous art, and as such

cannot b relied on as a ref rence by the Examiner in this case.

Rejections Under 35 U.S.C. §103

Independent claims 1, 12, 23, 34, 45, 52, 59, 68, and 94 include a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2143.

As thoroughly discussed in a recent court holding,

> . . . the essential factual evidence on the issue of obviousness is set forth in Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the Graham factors)." In re Lee, 61 USPQ2d, 1430 (Fed. Cir. 2002).

A showing of a suggestion, teaching or motivation to combine the prior art reference is an "essential component of an obvious holding" C.R. Bard, Inc., v. M3 Systems, Inc., 48 USPQ2d 1225, 1232 (Fed. Cir. 1998).

The expectation of success is not whether it would have been obvious to try a modification or combination. Gillette Co. v. S.C. Johnson & Son, Inc., 9191 F.2d 720, 725 (Fed. Cir. 1990).

A prior art ref rence or combined references must teach or suggest all of the

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limitations of a claim to be prior art under §103. In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Rejections Under 35 U.S.C. §103 of Claims

The rejection under 35 U.S.C. §103 of claims 1, 3-8, 10-12, 14-18, 20-22, 34, 36-40, 42, 44, 45, 48, 50-52, 55, 57-61, 64, 66-73, 80-86, and 93 as unpatentable over Takasaki (United States Patent No. 6,000,892) in view of De Caro (United States Patent No. 4,959,938) may not be properly made.

The Proposed Modification or Combination Would Change the Principle of Operation of Takasaki

The MPEP states that "[I]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)" MPEP 2143.01.

The Takasaki '892 reference identifies a problem of "bulging on the surface of a material" around a screw. Takasaki '892, column 1, lines 45-46. Takasaki '892 only teaches a "screw comprising a shank having a straight portion (emphasis added), a tapered portion at one end of the straight portion, and a head at the other end of the straight portion". Takasaki '892, column 1 lines 50-52. The Takasaki '892 reference incorporates threads on the straight portion having a first lead angle and a second lead angle. Takasaki '892, column 1 lines 55-60.

The principle of operation for suppressing the bulging in the Takasaki '892 is clearly identified by the Takasaki '892 reference as being:

> "[d]ue to the difference in lead angle, the trailing threads 5 do not proceed along the thread grooves formed in the member A1 by the leading threads 4, so that the member A1 is plastically deformed by the trailing threads 5. The thread grooves formed in the member A1 are crushed or deformed by the trailing threads 5, providing flexibility at the contact portions between the plate member and the trailing threads 5." Takasaki '892, Column 2, lines 53-60.

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The proposed modification or combination of the teachings of Takasaki '892 with the teachings of De Caro '938 to "construct the upper region with a greater cross-sectional area than the lower region" as suggested by the Examiner would change the principle of operation of, at least, "providing flexibility at the contact portions between the plate member and the trailing threads" of the Takasaki '892 reference. The proposed change or modification to the teachings of Takasaki '892 would clearly prevent the trailing threads from interacting with the "thread grooves formed in the member" in a flexible manner. The proposed modification or combination of the teachings of Takasaki '892 would instead and by necessity cause the "greater cross-sectional area", instead of the trailing threads, to be driven through the material. In addition, the modification or combination of the teachings of Takasaki '892 to include a "greater cross-sectional area" would require a substantial reconstruction and redesign of the elements shown in Takasaki '892, since it would require, at least, the straight portion to be reconstructed and redesigned into a non-straight portion. Because of, at least, these reasons the rejection of the claim is improper.

No Motivation or Suggestion To Make The Proposed Combination or Modification

The cited prior art and the knowledge of one of ordinary skill in the art at the time the invention was made does not teach or suggest a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region. This is evidenced, at least, by the Takasaki '892 reference, clearly and in no uncertain terms, teaching and suggesting that the problem to be solved was to be accomplished by utilizing a "screw comprising a shank having a straight portion, a tapered portion at one end of the straight portion, and a head at the other end of the straight portion" Takasaki '892, column 1 lines 50-52. The teaching and suggestion of the Takasaki '892 reference requires that the shank be straight and not to be of differing diameters as in the claimed invention.

The Examiner's asserted rejection under 35 U.S.C §103 of the claims simply does not apply since the required motivation or suggestion is not present to arrive at a screw having, at least, a substantially cylindrical threaded lower r gion wherein the

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screw has a cross-sectional area along the cylindrical upper region gr ater than the cross-sectional area of the shaft along the cylindrical lower region.

The lack of motivation or suggestion is additionally clear by, at least, the use of the De Caro '938 reference (even if it was incorrectly asserted to be analogous art) since the De Caro '938 reference is clearly not teaching or suggesting a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

References Teach Away

It is a well-established "general rule" that references that teach away cannot serve to create a *prima facie* case of obviousness. In re Gurley, 27 F3d 551, 553, 31 USPQ2d 1131, 1132 (Fed. Cir. 1994). A "reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the Applicants." Winner Int'l Royalty Corp. v. Wang, 202 F.3d 1340 (Fed. Cir. 2000) citing Gurley at 553; Monarch Knitting Machinery v. Sulzer Morat GmbH, 139 F.3d 877, 882 (Fed. Cir. 1998).

The De Caro '938 reference expressly teaches and suggests a line of development flowing toward screw/plate assemblies. The assembly has a screw and plate used together to accomplish the objects set forth in the De Caro '938 reference as, at least, discussed above. This clearly is a line of development unlikely to be productive in achieving the result of, among other things, eliminating substrate displacement as sought by the Applicants. As such, the De Caro '938 and Takasaki '892 references clearly teach away from the claimed invention. Winner, citing Gurley at 553; Monarch Knitting Machinery, at 882. Therefore, the rejection under 35 U.S.C. §103 is improper for, at least, this additional reason.

Rejection of Claims 10, 21, 31, 34, 50, 57, 66, 68-73, 80-86, and 93 Improper

Claims 10, 21, 31, 34, 50, 57, 66, 68-73, 80-86, and 93 have been rejected under 35 U.S.C. §103(a) as being unpat ntabl over the Takasaki '892 reference in view of

the De Caro '938 reference.

As discussed above the rejection of the claims is improper since the teachings of the Takasaki '892 reference cannot be properly combined or modified by the teachings of the De Caro '938 reference. The proposed combination, therefore, clearly does not properly serve as a basis for the rejection of claims 10, 21, 31, 34, 50, 57, 66, 68-73, 80-86, and 93. The combination or modification would not be expected, by one of skill in the art, to result in the claimed invention as a whole, having among other things, a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

35 U.S.C. §103(a) Rejection of Claims 2, 13, 23-28, 30, 32, 35, 46, 53, 62, 94-97, 99, 106-110, and 119 Improper

Claims 2, 13, 23-28, 30, 32, 35, 46, 53, 62, 94-97, 99, 106-110, and 119 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Takasaki '892 in view of the De Caro '938 reference as applied to claims 1, 12, 34, 45, 52, and 59 in further view of the Hsing '312 reference.

As discussed above the rejection is improper since the teachings of Takasaki cannot be properly combined or modified by the teachings of De Caro and the proposed combination thus does not properly serve as a basis of rejection for claims 2, 13, 23-28, 30, 32, 35, 46, 53, 62, 94-97, 99, 106-110, and 119. The combination or modification simply would not be expected, by one of skill in the art, to result in the claimed invention as a whole, having among other things, a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

In addition, the courts have held that the prior art reference must be considered in its entirety, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984); see also M.P.E.P. §2141.02. The burden is on the Examiner to demonstrat that th prior art videnc s suffici nt suggestion of the d sirability of doing

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what the inv ntor has done. Se_ M.P.E.P. §2142. At an irreducible minimum, this burden requires the Examiner to apply the facts of the case to "present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). Clearly, the Examiner cannot discharge himself from this burden by simply declaring all of the elements of an invention, along with the manner of combining these elements, to be well known in the art. Ex parte Stern, 13 USPQ2d 1379, 1381 (Bd. Pat. App. & Inter. 1989).

The Applicants respectfully point out that the Hsing '312 reference at column 3, lines 30-40, states that a clearance hole is formed in the piece to be fastened through which the shank having the threads may pass freely. In this particular rejection, the Examiner appears to have merely taken the Hsing '312 reference's thread configuration and declared all of the elements of an invention, along with the manner of combining these elements, to be well known in the art. Clearly, the Hsing '312 reference has not been considered in its entirety since the portions of the Hsing '312 reference pointed to by the Examiner would lead away from the claimed invention.

35 U.S.C. §103(a) Rejection of Claims 19, 41, 47, 54, 63, 74-79, 87 and 101-104 Improper

Claims 19, 41, 47, 54, 63, 74-79, 87 and 101-104 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Takasaki '892 reference in view of the De Caro '938 reference as applied to claims 12, 34, 45, 52, 59 and 68-73 in view of Dreger (United States Patent 5,020,954).

As discussed above the rejection of the claims is improper since the teachings of the Takasaki '892 reference cannot be properly combined or modified by the teachings of the De Caro '938 reference. The proposed combination, therefore, clearly does not properly serve as a basis of rejection for claims 19, 41, 47, 54, 63, 74-79, 87 and 101-104. The asserted combination or modification would not be expected, by one of skill in the art, to result in the claimed invention as a whole having, among other things, a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region great r than th cross-sectional

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area of the shaft along th cylindrical lower region.

35 U.S.C. §103(a) Rejection of Claims 29, 100, and 113 Improper

Claims 29, 100, and 113 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Takasaki, in view of the De Caro '938 patent, in further view of Hsing as applied to claims 23 and 94, and in further view of Dreger.

As discussed above the rejection of the claims is improper since the teachings of the Takasaki '892 reference cannot be properly combined or modified by the teachings of the De Caro '938 reference. The proposed combination, therefore, clearly does not properly serve as a basis of rejection for claims 29, 100, and 113. The combination or modification would not be expected, by one of skill in the art, to result in the claimed invention as a whole, having among other things, a screw having a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

Objective Evidence of Non-Obviousness

Applicants present herewith a Declaration of Hubert T. McGovern, under 37 C.F.R. §1.132, (Exhibit A) for the purpose of traversing any of the above obviousness rejections of the pending claims on the basis of the cited art and/or the knowledge available to one of skill in the art. The Declaration presents expert opinion and objective factual evidence in support of the Applicants' arguments that the claimed invention is not obvious in view of the prior art cited by the Examiner.

Applicants respectfully note that MPEP §716.01 states as follows:

> Evidence traversing rejections must be considered by the Examiner whenever present. All entered affidavits, declarations and other evidence traversing rejections are acknowledged and commented upon by the Examiner in the next succeeding action . . . Where the evidence is insufficient to overcome the rejection, the Examiner must specifically explain why the evidence is insufficient. General statements such as, 'the declaration lacks technical validity' or 'the evidence is not commensurate with the scope of the claims' without an explanation supporting th findings are not sufficient.

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Th Declaration contains declarations and statements of Mr. McGovern att sting to the commercial success of a commercial embodiment of the present invention, which is known under the brand name of TrapEase. Mr. McGovern's Declaration closely ties the commercial success of TrapEase to the claimed attributes and, in particular, to the substantially cylindrical-threaded lower region wherein TrapEase has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region. Mr. McGovern has provided a detailed statement of the factual basis for his opinion that TrapEase is a commercial success. Most notably, Mr. McGovern has provided survey results (Exhibit B) ranking brands and comments on the survey as found in "Home Improvement Executive", Vol. 13, No. 10, May 26, 2003. Mr. McGovern comments on the survey and expresses that it clearly indicates that the TrapEase, which incorporates the claimed invention, shows a dominance in the market place. Applicants note that Mr. McGovern has also provided and commented on sales figures for TrapEase in his Declaration. The sales figures are with regard to the revenue and units sold for the years 2002 and 2003 (through October). Mr. McGovern has stated that the increase in sales is directly attributable to the claimed invention.

Applicants additionally point out that Mr. McGovern has attested to the unexpected results associated with the commercial embodiment of the present invention, which is known under the brand name of TrapEase. Mr. McGovern's Declaration closely ties the unexpected results associated with TrapEase to the claimed features, in particular, to TrapEase having a substantially cylindrical-threaded lower region wherein TrapEase has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region. Most notably, Mr. McGovern has stated that TrapEase has displayed unexpected results with regard to solving the longstanding problem of mushrooming and volcanoing. Mr. McGovern has pointed to a comparative picture (Exhibit C) of a "Standard Deck Screw" and TrapEase, both of which have been driven into composite lumber. The resulting difference in the driven screws is clear.

In accordance with standards set out by the MPEP and the relevant case law, evidence in favor of a *prima facie* case of obviousness should be balanced against evidence for nonobviousness presented by the Applicants. In this case and as

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thoroughly discussed by the Applicants in previous responses as well as in the Examiner interview and in this paper, the case for obviousness of the claimed invention is weak at best. Specifically, there is no motivation or suggestion to modify or combine the teachings of the cited references that would result in a screw having among other things, a substantially cylindrical threaded lower region wherein the screw has a cross-sectional area along the cylindrical upper region greater than the cross-sectional area of the shaft along the cylindrical lower region.

Even if the obviousness rejections were based on a proper and sufficient *prima faci* case under 35 U.S.C. §103 (which Applicants respectfully dispute) Applicants' evidence of, at least, commercial success or unexpected results is more than sufficient to overcome each of the Examiner's claim rejections.

In summary, Applicants have addressed each of the rejections within the present Office Action by the above Remarks and objective evidence of non-obviousness. It is believed the application now stands in condition for allowance, and prompt favorable action thereon is earnestly solicited.

Respectfully submitted,

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